

## **Abstract:**

A study completed by the CDC targeting child maltreatment documented that 91,278 infants were harmed; 30,000 were newborns less than one week old. In Virginia, 40% of child deaths resulting from maltreatment occurred in the 18 city region surrounding the military treatment facility; 50% of the deaths were of children less than one year old, and one in five was previously abused. Within our local military community, over 200 cases of child maltreatment occurred during 2010. Over the course of a lifetime, healthcare costs associated with maltreatment exceed \$400 million, not to mention the emotional effects for the child and family. Research shows that when exposed to human touch, infants cry less, display calmer temperament and are more soothable. Touch fosters communication, physical closeness and a bond between parent and child, leading to greater confidence and less frustration, making a parent less likely to reach out and harm. The goal of the infant massage program is to increase parental confidence by modeling nurturing behaviors and providing emotional support and encouragement through education. By increasing parental confidence, it is hypothesized that rates of child maltreatment within the local military community will decrease. Since January, nearly 100 couples comprising 3% of the annual birth rate at this military treatment facility have attended infant massage. Data obtained from parental confidence questionnaires reveal that after attending infant massage, overall confidence as a parent and ability to provide nurturing touch was higher than compared to rates prior to attending class. Infant massage has increased parental confidence in one third of military families who have given birth this past year in this area. By providing support through education, parents are taught an alternative skill set in which to care, bond, and communicate with their infants; all of which foster parental confidence and may reduce child maltreatment.

## **Methods:**

Family violence is a public health concern, especially for military families. Since 2001, over one million troops have deployed and redeployed, increasing stress that can significantly alter family roles and functioning. One study found that the rate of child maltreatment was twice as high after October 2002 and that both departures and returns from deployment impose stressors and likely increase the rate of maltreatment. Another study found the rates of child neglect increased sharply between 2001 and 2004, reversing a decade long downward trend.

All sources of preventative literature advocate the need to increase parental support, education, and skills. The Perinatal Education Program offers opportunities for expectant parents to learn and gain emotional support through repetitive exposure of targeted skills and parental empowerment. Numerous prenatal opportunities exist; however, little was available after birth.

The infant massage program was designed as a venue in which to continue support through education during the postpartum period. Over 200 cases of child maltreatment occurred within the local military community in 2010. Infant massage teaches parents how to build a loving bond with their babies through touch. Gentle touch decreases the amount of stress hormone that is released which results in a calmer nervous system, allowing the infant to relax as evidenced by longer sleep cycles, less crying, and more time spent in the active, alert state. These infant traits contribute to less parental frustration and feelings of being overwhelmed. When taught to

recognize that the sound of their voice and feel of their touch has the ability to calm, parents become more confident in their ability to care for their infant. Through touch, a parent also learns their baby's cues and becomes better at responding to them. Touch contributes to mutual feelings of respect, love, and attachment. As a parent bonds with their baby, their confidence and identity as either a Mommy or Daddy is bolstered, resulting in less tendency to cause their child harm.

The Mother Baby Nurse Specialist who is a Certified Infant Massage Educator developed a curriculum for a monthly, two hour class. The curriculum was developed and presented to the Executive Steering Committee as a Perinatal Advisory Board process improvement initiative. The class was designed to focus on the critical age group between two and four months; a timeframe where research has shown the risk for infant maltreatment to be at its highest. Classes were scheduled on a monthly basis for families with infants born at term, and quarterly for parents with infants in the NICU. A limit of ten couplets per class was initially placed; however, due to increased demand, the class was expanded to allow up to 15 couplets. The class was advertised in the outpatient and inpatient settings including the pediatric and obstetric clinics, high risk antepartum, labor/delivery, and postpartum units. A nurse provider clinic was created in the outpatient documentation system, AHLTA. This allows for parents to book the class just like an appointment. The parent receives an automated reminder phone call two days prior to the course which assists in keeping the no-show rate at or below 10%. By booking the class through AHLTA, participation can be documented in the patient's medical record.

Logistics including room assignment and schedule were arranged through the assistance of the Perinatal Educator and the Staff Education and Training Department. A large classroom was allocated and provided a setting where parents could comfortably attend class with freedom to attend to their infant's needs including a place to breastfeed, change diapers, and park strollers. The set up of the room included audiovisual equipment which allowed for presentation of a Power Point and video instruction for visual learning. Soft music is played during demonstration of massage techniques, which aids relaxation and auditory learning. Parents were invited to sit and to place provided linens upon the floor for their infant to lie on. The temperature of the room was easily adjustable and provided warmth to allow infants to be dressed down to their diaper without becoming chilled.

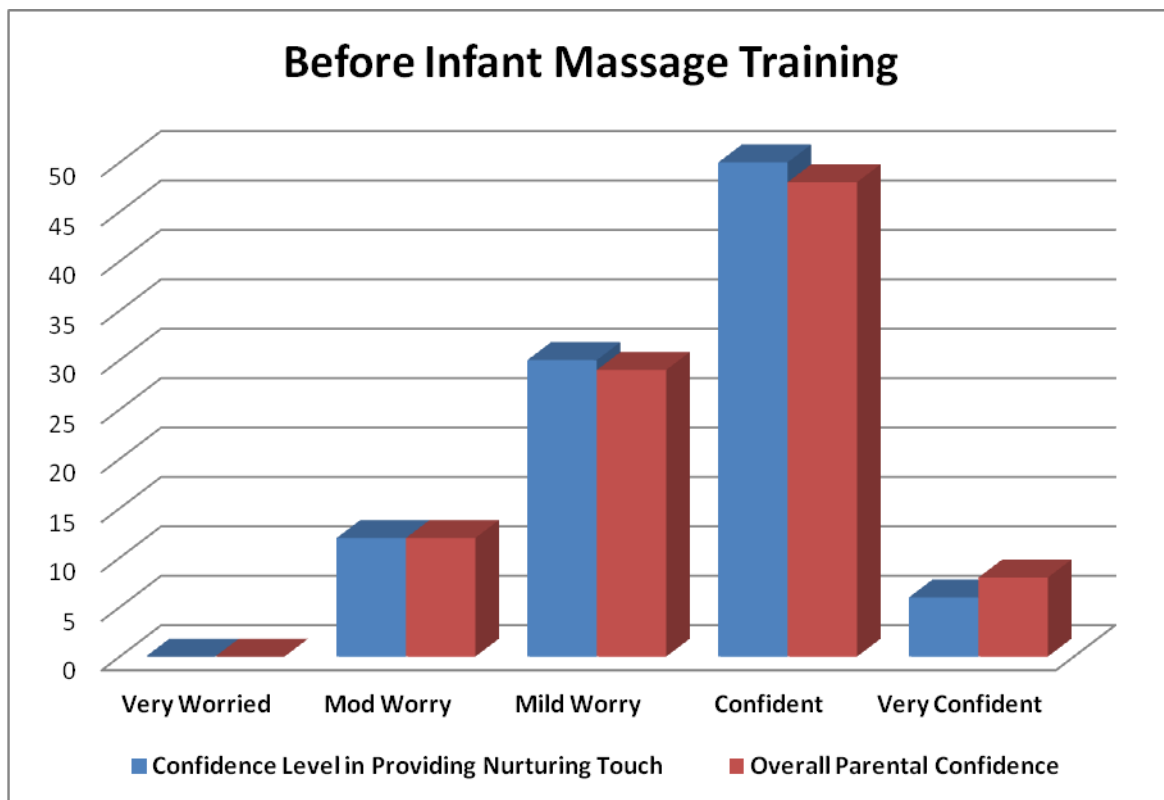
Fiscal resources were allocated for the training of two additional instructors; a total of \$600 plus the costs associated with travel. Instructor training included attendance at a two day training course and passing of a certification exam. Linens were provided by the Mother Baby Unit floor stock. The program was launched with its first class in January 2011 and to date, 98 couplets have attended. The majority of those in attendance are mothers and infants; however, fathers, grandparents, and siblings have also attended making it a family centered opportunity.

A data collection tool was developed in the form of an anonymous questionnaire that was designed to ensure that learning objectives were being achieved, but also to measure pre and post parental confidence levels. The ten question tool contains six questions that address learning objectives and four questions to measure pre and post levels of confidence. The questions are formatted using a five-point Likert like scale ranging from very confident to very worried. Data collection begins by ensuring that each adult in attendance completes a questionnaire before

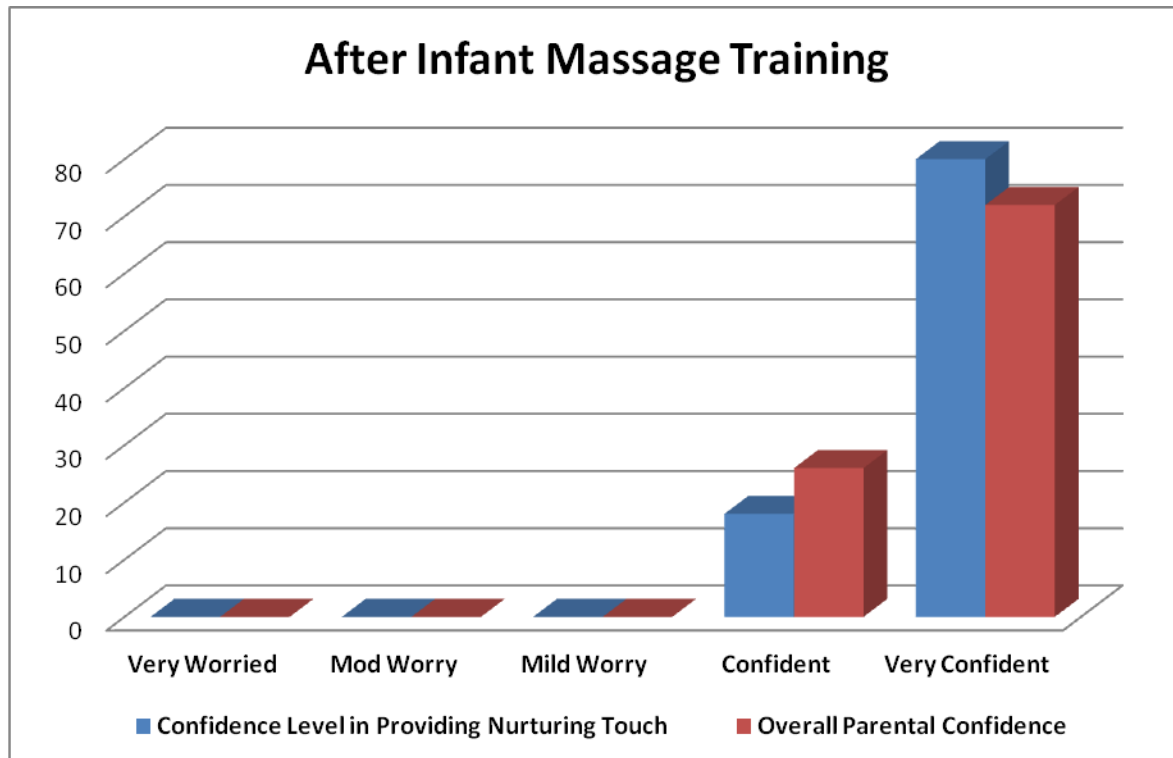
leaving, resulting in 100% response rate. The questionnaires are given to the Perinatal Educator who tabulates the data in which to identify trends helpful in determining whether the goal of increasing parental confidence has been achieved. Data has been collected since the class begun in January 2011. Since then, 98 couplets have attended, creating a representative sample of 30% of the annual delivery volume to date for 2011.

### **Results:**

Of the 98 responses, parents rated their ability to provide nurturing touch pre instruction ranging from moderately worried to very confident (see below figure); 6% rated themselves as very confident (n=6), 51% rated themselves as confident (n=50), 31% rated themselves as mildly worried (n=30), and 12% rated themselves as moderately worried (n=12). In response to overall confidence level as a parent, parents rated their confidence level pre instruction ranging from mildly worried to very confident (see below figure). 8% rated themselves as very confident (n=8), 49% rated themselves as confident (n=48), 30% rated themselves as mildly worried (n=29), and 12% rated themselves as moderately worried (n=12).



After completion of the class, parents rated their ability to provide nurturing touch as either confident or very confident (see below figure); 82% rated themselves as very confident (n=80) while the remaining 18% rated themselves as confident (n=18). Parents rated their overall confidence level as either confident or very confident after taking the class; 27% rated themselves as confident (n=26) and 73% rated themselves as very confident (n=72).



Infant massage has had secondary effects that have served to benefit parents and their babies. The class has become a source of support for parents. The group setting allows for parents to learn from one another through their questions and sharing of experiences and knowledge. The class also provides a forum for discussion of health issues. As each class is taught by a registered nurse, parents often pose questions regarding newborn development that the nurse is able to answer. Parents who verbalize other concerns are referred to their medical provider.

For women with postpartum depression, a pilot study indicated that infant massage has a positive effect on maternal-infant interaction, thereby reducing the negative effects that postpartum depression has on maternal-infant bonding. Further studies have been conducted and confirm that not only does infant massage improve maternal-infant interaction and bonding, but it reduces the symptom severity as mothers report feeling psychologically better as a result of seeing their baby's positive reactions. For fathers who are deployed during the pregnancy or birth, implementing infant massage can assist with bonding between a father and his baby. Infant massage gives fathers the opportunity to handle their babies gently and convey warmth through touch.

## **Conclusion:**

The infant massage program has received wide recognition at the command level and was competitively selected by the Quality Council for an annual process improvement award for Quality in Healthcare Excellence. The program was highlighted at a recent quality healthcare symposium presented by the medical center. As a command sponsored Perinatal Advisory Board (PAB) process improvement initiative, the program was reported to the service headquarters for medicine via the PAB quarterly report card and highlighted as a process improvement initiative geared towards the task of increasing quality health care and patient satisfaction.

Infant massage is sustainable at the command level through the team of six perinatal Clinical Nurse Specialists and nursing staff of the Maternal Infant Department. This team is dedicated to ensure that the program sustain a high level of family participation. Due to the positive reception that the program has received at the community and command level, our patients' satisfaction provides the highest source of referrals. Four nurses have obtained instructor status, including one civilian, which will help maintain continuity for when military nurses move onto their next duty station. Military nurses will be able to bring the training and experience with infant massage to their next duty station, maximizing the opportunity and benefit throughout the military health system.

Infant massage is marketable for any setting that provides care to mothers, infants, and new families. As pregnancy, or conditions related to, is the number one diagnosis throughout the military health system, infant massage training should be incorporated into any perinatal education program as it targets customer service and the provision of quality health care. By providing support through education, our commitment to the military families we serve is reinforced. Military families have unique needs and experience stressors related to active duty service by one or both parents. Infant massage is an opportunity to reach out to families after the birth of a baby and through modeling of nurturing behaviors, increase parental confidence in effort to lessen frustration and subsequent maltreatment. Infant massage exemplifies family-centered care, is preventative, and cost-effective. If only one parent learns to calm their baby through touch, and grows to be more confident in their skills, as opposed to reacting out of frustration and causing harm, our goal has been achieved.